

IN THE CLAIMS:

1.-7. (Cancelled)

8. (Currently amended) An electrolytic gold plating apparatus for performing electrolytic gold plating on a surface of a substrate body using a gold sulfite plating solution, ~~which comprises a detecting means for detecting~~ , comprising a detector configured to detect a deterioration degree of said gold sulfite plating solution in which light is irradiated to said gold sulfite plating solution and light intensity is measured after the light is irradiated.

9. (Currently amended) An electrolytic gold plating apparatus for performing electrolytic gold plating on a surface of a substrate body using a gold sulfite plating solution, ~~which comprises at least one of~~ , comprising means for irradiating light to said gold sulfite plating solution and measuring a light intensity after said irradiation, and at least one of means for measuring a pH of said gold sulfite plating solution, means for measuring sulfurous acid in gold sulfite complex of said gold sulfite plating solution, and means for measuring sulfuric acid of said gold sulfite plating solution.

10. (Original) An electrolytic gold plating apparatus according to claim 9, wherein said means for measuring said light intensity is an absorptiometer.

11. (Original) An electrolytic gold plating apparatus according to any one of claims 9 and 10, wherein said means for measuring said pH is a pH meter using a glass electrode.

12. (Previously amended) An electrolytic gold plating apparatus according to Claim 9 or 10, wherein said means for measuring said sulfurous acid in said complex or sulfuric acid is an automatic titrator or a liquid chromatograph.

13. (Previously amended) An electrolytic gold plating apparatus according to Claim 9 or 10, which comprises a monitoring unit for displaying a value measured by at least one of said means for measuring a light intensity, said means for measuring said pH, said means for measuring sulfurous acid and said means for measuring sulfuric acid.

14. (Original) An electrolytic gold plating apparatus for performing electrolytic gold plating on a surface of a substrate body in a gold plating bath containing a gold sulfite plating solution, which comprises:

an absorptiometer for irradiating light to said plating solution and measuring a light intensity after said irradiation;

a pH meter for measuring a pH of said plating solution;

a concentration measurement unit consisting of an automatic titrator or a liquid chromatograph for measuring a concentration of at least one of sulfurous acid or sulfuric acid in said plating solution;

pipes for individually connecting said absorptiometer, said pH meter and said concentration measurement unit to said gold plating bath, said pipes making said plating solution to pass through; and

a personal computer for displaying quality of said plating solution based on a value measured by at least one of said absorptiometer, said pH meter and said concentration measurement unit.

15. (Previously amended) An electrolytic gold plating apparatus according to Claims 8 to 10 and 14, which comprises:

an automatic adding solution supply unit for adding said plating solution based on a value obtained by measuring at least one of an amount of gold colloid of said plating solution, a value of pH of said plating solution, a concentration of sulfurous acid in gold sulfite complex of said plating solution and a concentration of sulfuric acid of said plating solution;

an automatic pH adjustment unit for adjusting pH; and

an automatic water supply unit for supplying water for evaporated water.

16. (Previously amended) An electrolytic gold plating apparatus according to Claim 8 to 10 and 14, which comprises:

an anode, an object to be plated and an opening portion in a plating bath, said anode being vertically arranged, said object to be plated being arranged opposite to said anode, said opening portion being arranged at a side surface portion of said plating bath;

a substrate stage for vacuum-holding said object to be plated, said substrate stage detachably attached to said plating bath in a state of blocking said opening portion; and

a pushing unit for pushing and releasing said substrate stage to and from said opening portion.